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ABSTRACT

This paper provides an overview of Accelerated Reader, a system of computerized testing and record-keeping that supplements the regular classroom reading program. Accelerated Reader's primary goal is to increase literature-based reading practice. The program offers a computer-aided reading comprehension and management program intended to motivate students to read more and better books, believing that students who read well will do better in all other subjects. Accelerated Reader is currently used in approximately 43,000 schools throughout the United States. While the program is available for K-12, most of the sites using it are elementary and middle schools. Sections of the paper discuss background, philosophy and goals, program components, evidence of effectiveness, professional development and support, implementation, costs, considerations, contact information, and policy issues and questions. (SR)

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Accelerated Reader

Background - Philosophy and Goals - Program Components - Evidence of Effectiveness
Professional Development and Support - Implementation - Costs - Considerations
Policy Issues and Questions - Resources

Topic or Category: Reading
Grade Level: K-12
Target Population: General, At risk, Bilingual, Special Needs, Gifted

OVERVIEW

Background and Scope:

Accelerated Reader is a system of computerized testing and record-keeping that supplements the regular classroom reading program. The program is designed to help teachers motivate students to increase substantially literature-based reading practice. It was developed by Advantage Learning Systems in 1986 and is currently used in approximately 43,000 schools throughout the country. Though the program is available for K-12, most of the sites using Accelerated Reader are elementary and middle schools.

Philosophy and Goals:

The philosophy of Accelerated Reader is that the use of a computer-aided reading comprehension and management program can motivate students of all ages to read more and better books. The program is based on the belief that because reading is a foundational skill, students who read well will do better in math, science, social studies and language arts. Students who are successful readers will develop a greater appreciation for reading and school. The primary goal of the program, therefore, is to increase literature-based reading practice.

Program Components:

Accelerated Reader has three basic steps:
Having students choose books and read them at their own pace
Giving students a computerized quiz after they finish reading the books
Providing teachers with continual data on students' reading practices and literacy skills development so they can best assist students.

Main features of Accelerated Reader:
Quizzes: Students in schools using Accelerated Reader choose their own books to read from among an extensive list of titles provided by the company. After reading a book, the student takes a short computerized quiz. Each quiz is composed of multiple- choice questions that test the student's knowledge and comprehension of the story. After the student completes the quiz, the computer lets the student know how many correct answers were scored and awards points based upon the number of correct answers and length and difficulty of the book. The company has available more than 25,000 reading practice quizzes and will develop additional ones at teachers' request.
Computer-generated Reports: Several reports help teachers monitor student reading progress. A Diagnostic Report identifies reading problems and allows teachers to intervene as appropriate. A Literacy-Skills Chart assesses each student's proficiency on 24 higher-level reading skills, while a Student Report Record provides a complete list of books read by each student and the scores for each quiz. Reports also can monitor the progress of groups or classes of students.
Individualized Teacher Assistance: Teachers and librarians guide students in choosing books that are challenging without being frustrating. If a student does not do well on a quiz, he or she will receive

individual assistance from the teacher, such as choosing a different book and/or being assigned to read with others. Teachers help students set and achieve reading goals.

Evidence of Effectiveness:

Most studies of Accelerated Reader have been conducted by the Institute for Academic Excellence, a subsidiary of Advantage Learning that provides research and professional development services. Several large developer-administered studies have compared schools that purchased Accelerated Reader to schools that did not and have found higher scores in multiple subject areas in a majority of schools using the program.

Discussion of Evidence:

1. A 1996 study conducted by the Institute for Academic Excellence (Paul, VanderZee, Rue, Swanson) examined the impact of Accelerated Reader on attendance and standardized test scores of a representative sample of 2,500 elementary, middle and high schools. These schools were compared with approximately 3,500 schools of similar geographic and demographic characteristics that did not own the software. A comparative analysis of data revealed the following:

Statistically significant evidence that, in virtually every subject test (including reading, writing, math, science and social studies), a majority of schools that owned Accelerated Reader performed better than socioeconomically comparable schools that did not own the software.

A statistically significant majority of schools owning Accelerated Reader had higher attendance rates than their peers.

Gains in academic performance increased with the length of time that schools owned Accelerated Reader. Schools that owned the software for two or more years were 59% more likely to show test performance above the median for their control group.

Analysis of Accelerated Reader's effectiveness in different metropolitan settings indicated the program is most influential in urban schools and low socioeconomic environments.

Increased performance of schools owning Accelerated Schools software did not vary with the relative availability of computers at those schools, indicating that the effect is not due simply to increased use of technology.

2. In a 1997 noncontrolled study conducted by the Institute for Academic Excellence (Paul, Swanson, Zhang, and Hehenberger), scores for five subjects (reading, language arts, mathematics, science and social studies) from the Tennessee Comprehensive Assessment Program were analyzed for several hundred Tennessee grade schools. Schools that owned Accelerated Reader were compared with schools that had not purchased the program. The data suggested the following:

Accelerated Reader ownership resulted in higher achievement on standardized test scores. In every grade-subject pair, the Accelerated Reader schools showed a higher average adjusted mean scale score than the non-Accelerated Reader schools. Analysis of the differences in the means for particular grade-subject pairs showed statistical significance, with p-values ranging from a maximum of 0.016 for 7th-grade social studies to a low of 1.0 x 10-9 for 4th-grade language arts.

In 27 of 30 grade-subject pairs, Accelerated Reader showed a higher average adjusted mean gain. In general, the statistical significance was lower than in the case of scale scores, but still high in certain categories.

3. In a control-group study conducted by staff of the University of Dundee (Vollands, Topping & Evans, 1996), students at two inner- city primary schools in Aberdeen, Scotland, were taught to use Accelerated Reader. A pre-test was administered in the third week of the school year and a post-test six months later. Both the Shortened Edinburgh Reading Test and the Neale Analysis of Reading Ability were used. All students were either 10-year-old, 5th-grade children or 11-year-old, 6th-grade children. A total of 51 students were in the experimental groups that used Accelerated Reader; 38 students were in the control groups that had no exposure to the program. Quantitative and qualitative results indicated that even when less than fully implemented, the Accelerated Reading program yielded statistically significant gains in reading achievement greater than regular classroom teaching and an alternative intensive method.

4. Two other researchers (Peak and Dewalt, 1994) selected 50 9th-grade students to analyze the effects

of Accelerated Reader. Subjects for the study were college-prep freshmen from two junior high schools within the Gaston County, North Carolina, school system. Half of the students had used the program since 4th grade, while the other students had never used the program. The study used the Children's Assistance Trust reading scores from the 3rd, 6th and 8th grades. In the third grade, the non-Accelerated Reader students had an average reading score of 724, while the Accelerated Reader students had a slightly lower average reading score of 716. By the end of the 8th-grade year, however, Accelerated Reading students had an average reading score of 788 and yearly average gains of 13 points. Non-Accelerated Reading students had an average reading score of 766 and yearly average reading gains of 5.5 points. In addition, Accelerated Reading students reported reading more hours per week and checking out more library books than their non-Accelerated Reading peers.

Professional Development and Support:

Advantage Learning Systems offers three types of training for Accelerated Reader. The first training is a one-day overview seminar that helps teachers learn how to use the program, use and update student records, and create reports. A two-day advanced training provides more in-depth techniques for program usage, as well as information on computer-assisted reading diagnosis and intervention. This session is available for teachers who have used Accelerated Reader for at least six months. Both of these training sessions are offered at hotels throughout the country or can be conducted onsite for a slightly reduced per-person cost. Neither is required of schools, but both types of training are strongly recommended by the developer.

For persons not able to attend an overview seminar, Advantage Learning Systems requires the use of a training kit that consists of flipcharts, presenter's disks, videotape, guide and overheads. The kit also can be used as a staff development tool by a teacher who has attended the overview seminar.

The purchase of any Accelerated Reader software kit comes with a 12-month technical support package, which allows teachers toll-free access to the developer's large support staff. The support package can be extended for an additional cost.

Implementation:

Accelerated Reader is implemented by language arts teachers, reading specialists and librarians. In elementary schools, the program typically is used by all instructional staff who teach basic reading skills. In middle and high schools, the number of teachers using the program can vary widely.

The developer has noted higher rates of successful implementation among schools that have sent personnel to the initial overview session and to the advanced training. The developer also states that the program probably will not be effective unless schools can allot 60 minutes per day for reading. Ideally, the School will have a 30-minute block of time in the morning and another 30 minutes in the afternoon designated for this purpose.

Because reading affects every subject area, the developer recommends that everyone in the school, from the principal to the gym teacher, be aware of the program. As in other models, full administrative and staff support is seen as crucial to program implementation.

Costs:

Accelerated Reader has three different kits, all of which include reading management software, test disk sets, a comprehensive software manual, a network-wide school site license and 12 months of toll-free technical support. The Starter Kit, with reading practice disks for up to 200 quizzes, costs $399. The Economy Kit, which contains test disk sets for up to 1,000 quizzes, costs $1,499. The Super Kit, which has test disks for up to 1,000 quizzes and also includes software for a computer-adaptive testing program, costs $2,999.

A training kit, including flip charts, practice disks, guide books and overheads, costs $395. A one-day inservice training session costs $139 per person or $109 per person if three or more people from the

same school or district attend. The two-day follow-up training costs $499 per person or $429 per person if two or more people attend. The cost drops to $399 per person if three or more from the same school or district enroll. Travel and accommodation costs are not included in training fees. Schools can purchase supplemental materials such as a technical support contract and an array of motivational materials for students, including t-shirts, book bags, backpacks and bookmarks.

Considerations:

Accelerated Reading is designed to be used as supplemental instruction and does not take the place of a main reading program. The multiple-choice format of quizzes is useful in gauging literal comprehension of the texts and assessing students' reading level, but has no mechanism for helping students explore story ideas or apply the story's lessons to their personal experiences.

All schools need to grapple with the issue of what to do with the points awarded by the computer after the completion of each quiz. The points are meant to motivate students to read more and provide valuable information for teachers, but they also can stimulate competition between students and even teachers. Some schools have chosen to ignore the points, while others have used them to calculate awards and prizes given to students.

Because Accelerated Reader is a supplemental program used in conjunction with other reading approaches, it is impossible to determine from the research how much academic gain is due to the program and how much is the result of other strategies. At the same time, the pattern of improved scores in reading and other academic areas in many of the schools that have purchased the program indicates some degree of effectiveness that can be attributed directly to Accelerated Reader. With the exception of a few small independent studies, research evidence still is limited to studies produced by the developer.

Contact Information:
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Policy Issues and Questions:
How can states help districts and schools choose the most appropriate programs to improve students' skills and performance? What information and assistance would be useful?
Should states promote particular programs for districts and schools to use?
How can policymakers check and validate a program's track record before they encourage districts to implement the program?
What criteria should states and districts use to invest in various programs initially and for the long term?
How should policymakers weigh benefits of a program versus its costs and required resources? Can a balance be struck between effectiveness and efficiency?
How can a state encourage public participation/community interaction in schools and individual programs?
What state policies can help to improve teacher training and professional development so teachers are better equipped to help students learn more effectively?

Resources:
Paul, T. (1992). *National Reading Study and Theory of Reading Practice*. Madison, WI: The Institute for Academic Excellence.

Paul, T. (1996). *Patterns of Reading Practice*. Madison, WI: The Institute for Academic Excellence.

Paul, T.; Swanson, S.; Zhang, W.; and Hebenberger, L. (1997). *Learning Information System Effects on Reading, Language Arts, Math, Science and Social Studies* Madison, WI: The Institute for Academic Excellence.

Paul, T.; VanderZee, D.; Rue, T.; and Swanson, S. (1996). *Impact of the Accelerated Reader on Overall Academic Achievement and School Attendance*. Madison, WI: The Institute for Academic Excellence.

Peak, J., and Dewalt, M. (1993). *Effects of the Computerized Accelerated Reader Program on Reading Achievement*. Paper presented at the annual meeting of the Eastern Educational Research Association (Clearwater Beach, Florida, February 17-22, 1993).

Texas Center for Educational Research (1997). *Reading Programs for Students in the Lower Elementary Grades: What Does the Research Say?* Austin, TX: TCER.

Vollands, S.R.; Topping, K.J.; and Evans, H.M. (1996). *Experimental Evaluation of Computer-Assisted Self-Assessment of Reading Comprehension: Effects on Reading Achievement and Attitude*. Dundee, Scotland: University of Dundee.

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